

Technical Program - July 11

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| 9h | 9h30 | Registration |
| 9h30 | 10h10 | Opening Session |
| 10h10 | 10h30 | "ON THE MAIN SIMILARITIES AND DIFFERENCES BETWEEN NUMERICAL HEAT TRANSFER AND FLUID FLOW, AND THE GOOGLE PAGE RANK FORMULATION" <u>V. A. F. Costa</u> |
| 10h30 | 11h00 | coffee break |
| | | Chairs: F. Barlat & C. Picu |
| 11h00 | 11h50 | "Physical Basis of Strain Rate Sensitivity in Metallic Solid Solution Alloys" <u>Catalin Picu</u> |
| 11h50 | 12h10 | "Characterization of hardening behavior of metals using crystal / dislocation plasticity virtual experiments" <u>F. Barlat, Y. Jeong, C. Tomé</u> |
| 12h10 | 12h30 | "NON-LOCAL MODELS AND PHASE FIELD METHODS IN THE DESCRIPTION OF DUCTILE FAILURE" <u>Jose M. A. Cesar de Sa, Erfan Azinpour, Abel D. Santos</u> |
| Lunch 12h30-14h | | |
| | | Chairs: Edgar Rauch & Augusto Lopes |
| 14h | 14h50 | "Intragranular structure evolution and mechanical behavior of metals in cold forming" <u>Edgar Rauch</u> |
| 14h50 | 15h10 | "RESIDUAL STRESSES IN TEXTURED HCP TITANIUM; COMPARISON OF EXPERIMENTAL AND PREDICTED DATA" S. Dufrenoy, T. Chauveau, R. Brenner, <u>B. Bacroix</u> |
| 15h10 | 15h30 | "INVESTIGATION OF PLASTIC DEFORMATION OF HALITE SINGLE CRYSTALS : EXPERIMENTS AND IN-SITU OBSERVATIONS CONFRONTED TO CP-FEM SIMULATIONS" <u>J. L. Raphanel, A. Dimanov and D. Picard</u> |
| 15h30 | 15h50 | "THE ROLE OF CHROMIUM CARBIDES DISTRIBUTION ON THE CRACK PROPAGATION MECHANISM UNDER THREE-POINT BENDING TEST IN MARTENSITIC STAINLESS STEEL" <u>Alvise Miotti Bettanini, Laurent Delannay, Pascal J. Jacques, Thomas Pardoen, Guillaume Badinier, Jean-Denis Mithieux</u> |
| 15h50 | 16h20 | coffee break |
| | | Chairs: M.C. Oliveira & L.F. Menezes |
| 16h20 | 16h40 | "ON THE INFLUENCE OF BOUNDARY CONDITITONS ON sheet metal forming DEFECTS Prediction" D.M. Neto, M.C. Oliveira, J.L. Alves, A.D. Santos and <u>L.F. Menezes</u> |
| 16h40 | 17h00 | "MODELLING THE SELECTIVE LASER MELTING PROCESS AT THE SCALES OF THE POWDER AND THE PART" <u>Pierre-Yves DURAND, Marion GIRARD, Baptiste GIRAULT, Bruno COURANT</u> |
| 17h00 | 17h20 | "PARAMETER IDENTIFICATION OF THE CHABOCHE NONLINEAR KINEMATIC HARDENING USING THE VIRTUAL FIELDS METHOD" <u>Jiawei Fu, Frédéric Barlat, Jin-Hwan Kim, Fabrice Pierron</u> |
| 17h20 | 17h40 | MODELLING OF TENSION-COMPRESSION ASYMMETRY AND ORTHOTROPIC BEHAVIOUR OF METALLIC MATERIALS: PARAMETERS IDENTIFICATION PROCEDURE P.D. Barros, <u>M.C. Oliveira, J.L. Alves and L.F. Menezes</u> |
| 17h40 | 18h00 | "CONTROL STRATEGY OF TWIST SPRINGBACK FOR AN ASYMMETRIC THIN-WALLED TUBE SUBJECTED TO ROTARY DRAW BENDING" <u>Xin Xue, Juan Liao, Gabriela Vincze, António B. Pereira</u> |

Technical Program - July 12

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| | | Chair: F. Simões & R. Sousa |
| 9h | 9h20 | <i>"LARGE SCALE ADDITIVE MANUFACTURING USING ECO-COMPOSITES"</i> J. F. Horta, <u>F. J. P. Simões</u> , A. Mateus |
| 9h20 | 9h40 | <i>"DEVELOPING LOW COST TIME SAVING MOLDS FOR THERMOFORMING OPERATIONS"</i> <u>Daniel Afonso</u> , Ricardo Alves de Sousa, Ricardo Torcato |
| 9h40 | 10h00 | <i>"PRELIMINARY STUDIES OF THE SPIF PROCESS IN OF BRASS ALLOYS"</i> Daniel Fritzen, Gustavo S. De Lucca, Anderson Daleffe, Jovani Castelan, <u>Ricardo J. Alves de Sousa</u> and Lirio Schaeffer |
| 10h00 | 10h20 | <i>"TWIST SPRINGBACK ANALYSIS IN CURVED CHANNEL FORMING BASED ON A DISTORTIONAL HARDENING MODEL"</i> <u>Juan Liao</u> , Xin Xue, Frederic Barlat, Myoung-Gyu Lee, Gabriela Vincze, Antonio, B. Pereira |
| 10h20 | 10h50 | coffee break |
| | | Chairs: C. Picu & P. Marques |
| 10h50 | 11h40 | <i>"On the Micromechanical Modeling of the Thermomechanical Behavior of Polymers and Polymer Composite/Nanocomposites"</i> <u>Said Ahzi</u> |
| 11h40 | 12h00 | <i>"BRIDGING MACROPLASTICITY TO MICROPLASTICITY IN STRENGTHENING CERAMIC MATRIX COMPOSITES WITH DUCTILE NETWORKS"</i> <u>J. M. Vieira</u> , B. A. Almeida, A. B. Lopes, M. X. Gao, Y. Pan and F. J. Oliveira |
| 12h00 | 12h20 | <i>"GRAPHENE OXIDE: A UNIQUE NANO-PLATFORM TO BUILD ADVANCED MULTIFUNCTIONAL COMPOSITES"</i> <u>Paula A. A. P. Marques</u> |
| Lunch 12h20-14h | | |
| | | Chairs: F. Barlat |
| 14h | 14h50 | <i>"Plastic behavior and fracture of heavily drawn pearlitic wires"</i> <u>Jean-Hubert Schmitt</u> |
| 14h50 | 15h10 | <i>"MODELLING TEXTURES AND R-VALUES IN ALUMINIUM ALLOYS FOR DEEP DRAWING"</i> <u>Paul Van Houtte</u> , Diarmuid Shore, Tuan Nguyen Minh, Leo Kestens, Albert Van Bael |
| 15h10 | 15h30 | <i>"REGULARIZED FACETED YIELD SURFACES"</i> <u>Bjørn Holmedal</u> |
| 15h30 | 15h50 | <i>"PREDICTION OF FORMING LIMIT DIAGRAMS USING THE PHI-MODEL AND THE MARCINIAK-KUCZYNSKI MODEL"</i> <u>S. Touchal-Mguil</u> , M. Mianroodi, G. Altmeyer, S. Ahzi |
| 15h50 | 16h20 | coffee break |
| | | Chairs: R.A.F. Valente & A. Campos |
| 16h20 | 16h40 | <i>"NUMERICAL SIMULATION OF FRICTION STIR WELDING OPERATIONS WITH A SOFTENING-BASED CONSTITUTIVE MODEL"</i> <u>R.A.F. Valente</u> , R.M.F. Paulo, P. Carlone, G.S. Palazzo, F. Teixeira-Dias |
| 16h40 | 17h00 | <i>"NUMERICAL INVESTIGATION OF AN ARC INLET STRUCTURE EXTRUSION DIE FOR LARGE HOLLOW SECTION"</i> <u>Pan Jian-Yi</u> |
| 17h00 | 17h20 | <i>"DESIGN STRATEGIES FOR THE DEVELOPMENT OF MECHANICAL TESTS TO CHARACTERIZE SHEET METALS"</i> <u>A. Andrade-Campos</u> , Nelson Souto, Sandrine Thuillier |
| 17h20 | 17h40 | <i>"PRINCIPAL STRAINS BEFORE AND AFTER SHOULDER PROSTHETIC REPLACEMENT. A FINITE ELEMENT ANALYSIS"</i> <u>Margarida Bola</u> , António Ramos, José António Simões |
| 17h40 | 18h00 | <i>"ELASTO-PLASTIC ANALYSIS OF THE FEMUR/ FEMORAL STEM INTERACTION USING MESHLESS METHODS"</i> <u>Marco Marques</u> , Jorge Belinha, Vinga, S., L.M.J.S. Dinis, Renato Jorge |

Technical Program - July 13

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| | | Chairs: M. Coelho & A. Sousa |
| 9h | 9h20 | <i>"INTERPRETED MODELING FOR SAFETY AND EMISSIONS AT ROUNDABOUTS OR TRAFFIC SIGNALS IN CORRIDORS"</i> <u>Paulo Fernandes</u> , Margarida C. Coelho, Nagui M. Roupail |
| 9h20 | 9h40 | <i>"INTEGRATION OF ROAD TRAFFIC IMPACTS IN INTELLIGENT TRANSPORTATION SYSTEMS (ITS): IMPLICATIONS FOR MECHANICAL ENGINEERING"</i> <u>Margarida C. Coelho</u> |
| 9h40 | 10h00 | <i>"DEVELOPMENT OF A LOW-ENERGY GAS SOLENOID VALVE FOR USE IN DOMESTIC WATER HEATERS "</i> <u>Hélder Giesteira</u> , Jorge Ferreira, Vítor Costa, Ricardo Carranca |
| 10h00 | 10h20 | <i>"HOUSEHOLD WATER HEATING USING SMALL SCALE WIND TURBINES"</i> <u>M. A. Russo</u> , N. Martins |
| 10h20 | 10h50 | coffee break |
| | | Chair: A. Bastos & G. Vincze |
| 10h50 | 11h40 | <i>"Sheet-bulk metal forming: process development and mechanical characterization"</i> <u>Paulo A. F. Martins</u> |
| 11h40 | 12h00 | <i>"ASSESSMENT OF DIFFERENT DUCTILE DAMAGE MODELS AND EXPERIMENTAL VALIDATION"</i> <u>Rui Amaral</u> , Pedro Teixeira, Abel D. Santos, J. Cesár de Sá |
| 12h00 | 12h20 | <i>"STRESS INTENSITY FACTORS IN CENTRAL CRACKED PLATES USING DEAD ZONE STRESS CONCEPTABSTRACT"</i> Bhalekar Bhalchandra.D., <u>Francisco Q. Melo</u> , Bastos Pereira, A. M, Carla V. Lopes, R.B Patil |
| Lunch 12h20-14h | | |
| | | Chair: V. Neto & J. Mendes |
| 14h | 14h20 | <i>"TORQUE MEASUREMENT SYSTEMS EMPLOYING SURFACE ACOUSTIC WAVE DEVICES: CONCEPTION AND CALIBRATION PROCEDURES"</i> André Barata, <u>Joana C. Mendes</u> , Luis N. Alves, Antonio Pereira |
| 14h20 | 14h40 | <i>"DIAMOND COATINGS FOR MECHANICAL APPLICATIONS"</i> <u>Victor Neto</u> |
| 14h40 | 15h00 | <i>"ELECTRICAL CONDUCTIVITY AND STRUCTURAL PROPERTIES OF REDUCED GRAPHENE OXIDE BASED SAMPLES"</i> <u>Olena Okhay</u> , Catarina Dias, Joao Ventura, António Manuel de Bastos Pereira, Elby Titus, Alexander Tkach |
| 15h00 | 15h20 | <i>"CORRELATION MICROSTRUCTURES AND LOCAL MECHANICAL PARAMETERS IN THE FE-MN-AL-C TWIP STEELS"</i> <u>Igor Bdikin</u> , Budhendra Singh, Maxim Silibin, Marina Borodachenkova, Gabriela Vincze |
| 15h20 | 15h40 | <i>"LASER WELDING OF STEEL DUAL-PHASE 1000"</i> <u>José Amorim</u> and António B. Pereira |
| 15h40 | 16h00 | <i>"DEVELOPMENT OF A LOW ENERGY CONSUMPTION PROPORTIONAL VALVE FOR WATER FLOW REGULATION"</i> <u>Paulo Soares</u> , Jorge Ferreira, Vítor Costa, Raquel Vaz |
| 16h00 | 16h10 | Closing session |
| 16h10 | 16h30 | coffee break |